IN THE CLAIMS

Claim 1 has been amended as follows:

1. (Currently amended) A method for speed-resolved flow measurement during a movement cycle in magnetic resonance tomography, comprising the steps of:

acquiring a magnetic resonance tomography overview image of a selected region of a living subject exhibiting a movement cycle, said selected region encompassing moving tissue moving through said selected region and non-stationary tissue surrounding said moving tissue;

displaying the overview image on a screen;

during said movement cycle, quasi-simultaneously acquiring data for an anatomical image series of said selected region with the images in said series respectively showing said non-stationary tissue in successive, different positions, and data for a speed-resolved image series of a moving region, that encompasses said moving tissue, identified within said selected region, with respective images in said anatomical image series having a time correspondence with respective images in said speed-resolved image series; and

generating and displaying said anatomical image series and said speed-resolved image series on said screen with each image in said speed-resolved image series being directly integrated in the time-corresponding image of the anatomical image series using only said time correspondence.

2. (Previously presented) A method as claimed in claim 1 comprising segmenting said moving region identified within said selected region automatically during acquisition of said speed-resolved image series.

3. (Previously presented) A method as claimed in claim 1 comprising segmenting said moving region identified within said selected region immediately after acquisition of said speed-resolved image series.

4. (Original) A method as claimed in claim 1 comprising color-coding the images in said speed-resolved image series.

5. (Original) A method as claimed in claim 1 comprising displaying said anatomical image series and said speed-resolved image series on said screen immediately after acquiring said data for said anatomical image series and said data for said speed-resolved image series.

6. (Original) A method as claimed in claim 5 comprising displaying said anatomical image series and said speed-resolved image series as a movie on said screen.

7. (Previously presented) A method as claimed in claim 1 comprising manually identifying, on said screen, said moving region within said selected region.

8. (Previously presented) A method as claimed in claim 1 comprising identifying a plurality of moving regions within said selected region during the movement cycle, and acquiring data for a speed-resolved image series for each of said regions.

9. (Previously Presented) A method as claimed in claim 1 comprising acquiring said data for said anatomical image series and said data for said speed-resolved image series for a time, as said movement cycle, selected from the group consisting of a breathing cycle of said subject and a heart cycle of said subject.

10. (Original) A method as claimed in claim 1 comprising acquiring said data for each of said anatomical image series and said speed-resolved image series at approximately 20 images per movement cycle.

Claim 11 has been amended as follows:

11. (Currently amended) A magnetic resonance tomography apparatus comprising:

a magnetic resonance scanner adapted to receive a living subject therein, said living subject exhibiting a movement cycle, said selected region encompassing moving tissue moving through said selected region and non-stationary tissue surrounding said moving tissue;

a control computer for operating said magnetic resonance scanner;

a display screen connected to said control computer; and

said control computer operating said magnetic resonance scanner to acquire a magnetic resonance tomography overview image of said selected region of the living subject, and said computer causing the overview image to be displayed on said screen, and to operate said magnetic resonance during said movement cycle to quasi-simultaneously acquire data for an anatomical image series of the selected region with the images in said series respectively showing said non-stationary tissue in successive, different positions, and data for a speed-resolved

image series of a moving region, that encompasses said moving tissue, identified within said selected region, with respective images in said anatomical image series having a time correspondence with respective images in said speed-resolved image series, and generating and displaying said anatomical image series and said speed-resolved image series on said screen with each image in said speed-resolved image series being directly integrated in the time-corresponding image of the anatomical image series using only said time correspondence.

Claim 12 has been amended as follows:

12. (Currently amended) A computer-readable medium encoded with a data structure, said computer-readable medium being loadable into a control computer of a magnetic resonance tomography apparatus, including a magnetic resonance scanner operated by the control computer and a display screen connected to the control computer, data structure causing said control computer to:

acquire a magnetic resonance tomography overview image of a selected region of a living subject exhibiting a movement cycle said selected region encompassing moving tissue moving through said selected region and non-stationary tissue surrounding said moving tissue;

display the overview image on said screen,

during said movement cycle, quasi-simultaneously acquire data for an anatomical image series of said selected region with the images in said series respectively showing said non-stationary tissue in successive, different positions, and data for a speed-resolved image series of a moving region identified within a selected region during the movement

cycle, with respective images in said anatomical image series having a time correspondence with respective images in said speed-resolved image series, and

display said anatomical image series and said speed-resolved image series on said screen with each image in said speed-resolved image series being directly integrated in the time-corresponding image of the anatomical image series using only said time correspondence.